

<p>98-433945/37 A25 KAO CORP 96.12.26 96JP-348114 (98.07.07) C08G 18/32, 18/60 (C08G 18/32, 101:00) Manufacturing method of hard polyurethane resin - by reacting an isocyanate and an active hydrogen containing compound together C98-131322</p>	<p>KAOS 96.12.26 *JP 10182780-A A(12-R6, 12-S2F)</p>
<p>Mfg. method of hard polyurethane resin comprises reacting an isocyanate and an active hydrogen-contg. cpd. (X), wherein a part of (X) is (a) tert.-aminoalcohols of formula $\text{HO}-(\text{R}_2-\text{N}(\text{R}_1))_m-\text{R}_2-\text{OH}$ (I) and the reaction is conducted in the presence of (b) a cpd. of formula $\text{R}_3(\text{X})_n$ (II). R_1 = 1-24C alkyl or aralkyl; R_2 = 2-20C alkylene, alicyclic alkylene, aralkylene or $-(\text{CH}_2\text{CH}_2\text{O})_p-$ $(\text{CH}_2\text{CH}_2)_q$; m = 3-50; and p and q = 1-15.</p> <p><u>USE</u> Product is used in a hard polyurethane foam for heat insulation uses.</p>	<p><u>ADVANTAGE</u> Product excels in dimensional stability at low temperature.</p> <p><u>PREFERRED MATERIALS</u> R_3 is hexamethylene gp.. X is Br. Cpd. of formula (II) is 1,6-dibromohexane.</p> <p><u>EXAMPLE</u> Example 1: Polyol component 90 pts., water 2 pts., cyclopentane 13 pts., silicone foam controller 1 pt., tert.-aminoalcohol 10 pts., $\text{C}_6\text{H}_{12}\text{Br}_2$ 2.5 pts., isocyanate component (index = 105). Product urethane foam (density = 0.271 g/cm³) gave: CT = 9 sec. GT = 35 sec. TFT = 54 sec. RT = 79 sec. Free density = 27.1 g/l. Compression strength = 0.55 kg/cm². Low temp. shrinkage = 2.1%. Comp.Ex.2: All same components except using none of $\text{C}_6\text{H}_{12}\text{Br}_2$. Product urethane foam (density = 0.270 g/cm³) gave: CT = 9 sec. GT = 36 sec. TFT = 55 sec. RT = 80 sec. Free density = 27.0 g/l. Compression strength = 0.53 kg/cm². Low temp. shrinkage = 4.9%. (7pp171DwgNo.0/0)</p>

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